

National Climatic Data Center

DATA DOCUMENTATION

FOR

DATA SET 3810 (DSI-3810)

TOGA COARE Intense Observing Period (IOP) Surface Observations

December 3, 2002

National Climatic Data Center
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1. **Abstract:** This dataset is a compilation of all the surface observations from various observation platforms during the Intense Observing Period (IOP) of the [Tropical Ocean Global Atmosphere Coupled Ocean Atmosphere Response Experiment](http://www.ncdc.noaa.gov/oa/coare/index.html) (TOGA COARE). This experiment was designed to investigate the structure of the coupled system of the warm pool of the western Pacific and the atmosphere, to improve the ability to model this coupled system.

Measured variables include air temperature, sea temperature, wet-bulb temperature, dew point temperature, wind direction, wind speed, relative humidity, specific humidity and precipitation.

Data has been extensively quality controlled using both automated and interactive quality control techniques.

For additional information, and a complete listing of available products, see the TOGA COARE Data Information Unit (DIU) at:

<http://www.ncdc.noaa.gov/oa/coare/index.html>

2. **Element Names and Definitions:**

Year (nyr) is year when data was observed and is a 2-digit integer number.

Month (mo) is month in which data was observed and is a 2-digit integer number.

Day (nda) is day in month when data was observed and is a 2-digit integer number.

Hour (nhr) is hour in day when data was observed and is a 2-digit integer number.

Minute (min) is minute in hour when data was observed and is a 2-digit integer number.

Observation platform (site) identifies where data was observed and can be up to an 8-character string. Can be a ship, land station or buoy.

Latitude (lat) is expressed as a real number. Negative number used for position south latitude.

Longitude (lon) is expressed as a real number. Negative number used for west longitude.

Earth relative wind direction (wndir) is a real number indicating the observed wind direction in degrees true.

Earth relative wind speed (wnspd) is a real number indicating the observed wind speed in meters per second.

Atmospheric pressure (pres) is real number reporting the observed pressure in millibars.

Air temperature (dbtmp) is a real number reporting the ambient air temperature in degrees Celsius.

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Sea water temperature (sst) is a real number reporting the water temperature at the surface of the sea in degrees Celsius.

Wet-bulb temperature (wbtmp) is a real number reporting the observed wet-bulb temperature in degrees Celsius.

Dew point temperature (dptmp) is a real number reporting the dew point temperature in degrees Celsius.

Relative humidity (relhum) is a real number reporting the relative humidity in percent.

Specific humidity (sphum) is a real number reporting the specific humidity in grams per kilogram.

Precipitation (prec) is a real number reporting the total precipitation in millimeters.

Rain rate (rainrt) is a real number reporting total rainfall in millimeters per hour.

Time flag (flag(1)) is a 1-character quality control flag.

Latitude flag (flag(2)) is a 1-character quality control flag.

Longitude flag (flag(3)) is a 1-character quality control flag.

Wind direction flag (flag(4)) is a 1-character quality control flag.

Wind speed flag (flag(5)) is a 1-character quality control flag.

Atmosphere pressure flag (flag(6)) is a 1-character quality control flag.

Air temperature flag (flag(7)) is a 1-character quality control flag.

Sea temperature flag (flag(8)) is a 1-character quality control flag.

Wet-bulb temperature flag (flag(9)) is a 1-character quality control flag.

Dew point temperature flag (flag(10)) is a 1-character quality control flag.

Relative humidity flag (flag(11)) is a 1-character quality control flag.

Specific humidity flag (flag(12)) is a 1-character quality control flag.

Precipitation flag (flag(13)) is a 1-character quality control flag.

Rain rate flag (flag(14)) is a 1-character quality control flag.

The quality control flags are single alphabetic characters for each data value indicating the quality of that specific value. The flags are:

A - Original data had unknown units. The units shown were determined

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using a climatology or some other method.

B - Original data were out of the range bounds outlined in the Prescreening Program Range Bounds that follow the flag descriptions.

C - Time data are not sequential or date/time not valid.

D - Data failed the Air Temperature is always greater than or equal to the Wet-bulb Temperature is always greater than or equal to the Dew Point Temperature test.

E - Data failed resultant wind recomputation check. When the data set includes the platform's speed and direction along with the platform relative wind speed and direction, the prescreen program recomputes the earth relative wind speed and direction and compares the computed values to the reported earth relative wind speed and direction. A failed test occurs when the wind direction difference is >10 deg or the wind speed difference is >5 m/s.

F - Platform velocity unrealistic. Determined by platform position and speed data.

G - Data are greater than 4 standard deviations from the means in the da Silva et al. (1994) COADS climatology. The test is only applied to pressure, temperature, sea temperature, relative humidity, and wind speed data.

H - Discontinuity found in data.

I - Interesting feature found in data. More specific information on the feature is contained in the data reports. Examples include: hurricanes passing station, sharp sea water temperature gradients, strong convective events, etc.

J - Data are of poor quality by visual inspection, DO NOT USE.

K - Data suspect/use with caution - this flag applies when the data look to have obvious errors, but no specific reason for the error can be determined.

L - Oceanographic platform passes over land or fixed platform moves dramatically.

M - Known instrument malfunction.

N - Does not agree with neighboring stations.

P - Position of platform or its movement are uncertain. Data should be used with caution.

Q - Data questionable. Similar to the K flag, however the original data arrived flagged for use with caution so the Q flag is assigned.

S - Spike in the data. Usually one or two sequential data values (sometimes up to 4 values) that are drastically out of the current data trend. Spikes occur for many reasons including power surges, typos, data logging problems, lightning strikes, etc.

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- T - Time duplicate in data.
- V - Data suspect via detailed station intercomparison.
- X - Data missing or unavailable.
- Z - Data passed evaluation.

Prescreening Program Range Bounds

Variable	Lower Bound	Upper Bound	Units
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time	1-1-1980	12-31-1999	
latitude	-90	90	degrees
longitude	0	359	degrees
platform heading	0	359	degrees
platform speed			
Research vessels	0	15	m/S
Stationary buoys	0	0	m/s
Drifters	0	2	m/s
Land	0	0	m/s
wind direction	0	360	degrees
wind speed	0	40	m/s
atmospheric pressure	950	1050	mb sea level
air temperature	-10	40	deg. C
wet bulb temperature	-10	40	deg. C
dew point temperature	-10	40	deg. C
sea temperature	0	35	deg. C
relative humidity	0	100	percent
specific humidity	0	48	g/kg
rain rate	0	150	mm/hr

3. **Start Date:** 19921021

4. **Stop Date:** 19930303

5. **Coverage:** Pacific Ocean and Australia

Southernmost latitude: 10S
 Northernmost latitude: 10N
 Westernmost longitude: 100E
 Easternmost longitude: 180E

6. **How to Order Data:**

Ask NCDC's Climate Services about the cost of obtaining this data set.
 Phone: 828-271-4800
 FAX: 828-271-4876
 E-mail: NCDC.Orders@noaa.gov

7. **Archiving Data Center:**

National Climatic Data Center
 Federal Building
 151 Patton Avenue

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Asheville, NC 28801-5001
Phone: (828) 271-4800.

Florida State University
COARE Surface Meteorology DPC/DADC
Center for Ocean-Atmosphere Prediction Studies
Florida State University
2035 E. Paul Dirac Drive
Tallahassee, FL 32306-3041
Phone: 904-644-3797
Facsimile: 904-644-4841
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8. Technical Contact:

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, NC 28801-5001
Phone: (828) 271-4800.

9. Known Uncorrected Problems: None.

10. Quality Statement: The Data Processing Center (DPC)/Data Archive and Distribution Center (DADC) for COARE Surface Meteorological Data at Florida State University (COARE-MET) did the final quality control checks on all the surface meteorological data recorded during the TOGA COARE Intense Observation Period (IOP). Over 1 million individual surface observations were checked by automated and interactive quality-control techniques.

11. Essential Companion Datasets: Metadata is available as a separate dataset.

12. References:

TOGA COARE International Project Office, 1991, TOGA Coupled Ocean-Atmospheric Response Experiment (COARE) Experiment Design Handbook. University Corporation for Atmospheric Research, Boulder CO, 90pp.

da Silva, A. M., C. C. Young, and S. Levitus, 1994: Atlas of Surface Marine Data, Volume 1: Algorithms and Procedures. NOAA Atlas NESDIS 6, US Dept of Commerce, National Oceanic and Atmospheric Administration, 83pp. Available from: National Oceanographic Data Center, User Services Branch, NOAA/NESDIS/E/OC21, Washington DC, 20235

Smith, S. R., J. P. Camp, and D. M. Legler, 1996: TOGA COARE Handbook of Quality Control Procedures and Methods for Surface Meteorological Data. COAPS Report 96-3, Center for Ocean Atmospheric Prediction Studies, Florida State University, Tallahassee, FL, 32310

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